

SPECIAL
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Towards Achieving the OKI Group Environmental Vision 2020

Active Promotion of the OKI Group Environmental Vision 2020

OKI Group began its environmental activities in the 1970s. The basis of our environmental management is our environmental management system, which was integrated across the entire Group. Through our products and business activities, we are continually working to reduce environmental impacts.

The Environmental Vision 2020 was established in April 2012. This shows the direction of OKI Group's environmental activities in 4 areas. This vision is linked to achieving the targets of our mid-term business plan that OKI Group is now working on, and to our growth program that is focused on future business expansion. This vision is for more advanced environmental management than practiced until now. It is being pushed forward as a long term initiative.

Also, in recent years, as a global warming countermeasure, the Japan Business Federation (Keidanren) has been encouraging the creation of low carbon society execution plans. And to prevent pollution by chemicals, various regulations have been created and revised. There are also dramatic moves to create activity targets and plans against environmental problems in Japan and overseas. For example, the 11th Meeting of the Conference of the Contracting Parties to the Ramsar Convention (COP11) was held in October 2013. OKI Group aims to achieve the OKI Group Environmental Vision 2020, and thereby respond to such activities in Japan and overseas, achieve a better global environment for the next generation, and inherit the environment.

OKI Group Environmental Vision 2020

The OKI Group achieves a better global environment for the next generation and inherits the environment. Therefore, we promote environmental management and set targets for 2020 in the four fields of "Realization of a low-carbon society," "Prevention of pollution," "Resource circulation" and "Biodiversity conservation" and then actively work on the targets.

1. Realization of a low-carbon society

Contribute to realize a low-carbon society by the maximization of energy efficiency, through provision of environmentally conscious products and services and business activities.

2. Prevention of pollution

Minimize the use of chemical substances and emissions to the atmosphere and discharges to water which affect on human health and environment.

3. Resource circulation

Minimize new input resources by the expansion of recycling process of used products and production wastes, and reduction of materials at the time of production.

4. Biodiversity conservation

Establish a management system to work on the biodiversity conservation and sustainable use.

Realizing a Low Carbon Society

OKI Group continues to raise global warming countermeasures as an important theme. We are using IT technologies which are OKI's strengths, and working to create products and services which contribute to realizing a low carbon society, in response to the government's IT policies and product energy regulations. At the same time, considering the government's global warming countermeasures trend and inclinations of the electrical and electronics industry, we are also pouring effort into saving energy in our business activities. In March 2012 we announced our participation in Nippon Keidanren's Commitment to a Low Carbon Society, and in fiscal 2012 we participated in trials for full scale operations.

Green IT*¹ to Reduce Electricity Use in Next Generation Access Systems

As companies which have participated in the evolution of IT until today, OKI Group actively creates green IT products and services which help save energy. In September 2012, OKI developed OLT Drive Control Technology for next generation optical access systems. This is a new technology which contributes to achieving an energy conserving society.

In recent years, FTTH*² has spread rapidly, communications volume on the internet is forecast to grow, and there is progress in development of technologies for fast communication speeds. However, with higher speeds, network systems also consume more electricity, so lower power consumption during communication is growing in importance.

For next generation optical access systems which achieve fast communications by FTTH, OLT Drive Control Technology developed by OKI reduces OLT power consumption by about 30%.

In optical access systems, optical fiber is used to connect OLT*³ installed in buildings of businesses etc., to device ONUs*⁴ installed in homes. One optical fiber coming out from the OLT side is split into multiple lines before it reaches the home, and each line is pulled into a home and connected to the ONU. With this design, one OLT connects to multiple ONUs, and simultaneously sends and receives signals with them. The spread of FTTH has created a trend of increasing ONUs installed in homes, creating a corresponding need to also increase OLTs. An OLT must maintain a state which enables simultaneous transmitting and receiving with all ONUs it is connected to, and the OLT is always in a fully utilized state. Therefore, if there are few ONUs which transmit and receive, or if there is little communications volume, the OLT consumes more electricity than necessary.

The OLT Drive Control Technology now developed enables new cabling design for one OLT and the ONUs it connects to, with cabling in a virtual network with all ONUs connected to all OLTs. In this situation, the communication volumes of all ONUs are monitored, and if there is little communications volume, only one OLT operates, and other OLTs are put in a sleep state. In each home, during time periods when there are more

connections to the internet etc., the number of OLT operated units is increased. In this way, in response to communications volume, OLTs are turned on/off and the number of connected ONUs are controlled, so instead of the previous situation of OLTs always fully operating, average utilization rate is decreased, which enables reduction in power consumed during communications.

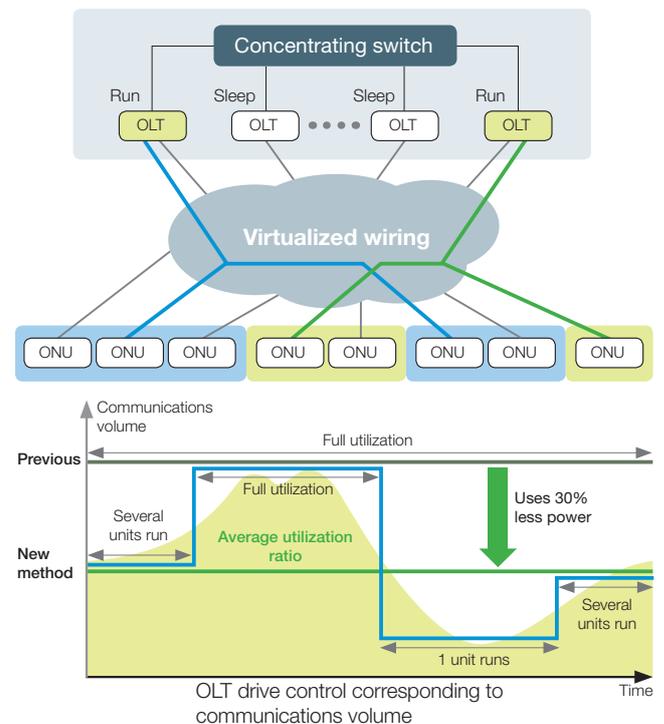
*1 Green IT: Environmental efforts related to IT that are classified into two categories: "Green of IT" and "Green by IT".

*2 FTTH (Fiber To The Home): Until now, phone lines (copper wires) have been used for cabling into homes, etc. FTTH is the name of a service which achieves high speed internet by using optical fiber instead.

*3 OLT (Optical Line Terminal): Optical access circuit terminal device installed in building of business etc. which builds a network system. Optical signals sent from ONUs are converted into electrical signals, and when sending to ONUs, the electrical signals are converted into optical signals and transmitted. The OLT also does other tasks, such as monitoring of ONUs.

*4 ONU (Optical Network Unit): Optical access terminal device installed in homes, etc. Optical signals sent from the OLT are converted into electrical signals, and when sending to the OLT, the electrical signals are converted into optical signals and transmitted. The actual circuit connection is PC etc. - ONU - OLT - internet connection device; optical signals are sent between ONU - OLT, with others transmitted in electrical signals.

OLT Drive Control Overview



Energy-saving Efforts in Business Activities

As proclaimed in the Environmental Vision 2020, the OKI Group has been committed to energy-saving activities, because it believes the reduction of greenhouse gases such as carbon dioxide (CO₂) emitted from its business activities is important for realizing a low-carbon society. In fiscal 2012, in order to respond to the Commitment to a Low Carbon Society and the Revised Energy Saving Act, we are setting new targets and will work towards them in fiscal 2013.

Since the Great East Japan Earthquake, we have continued to work on our previous energy saving policies. We have also worked on new policies: boosting production efficiency by improving facility operations, and planned renewal of worn out

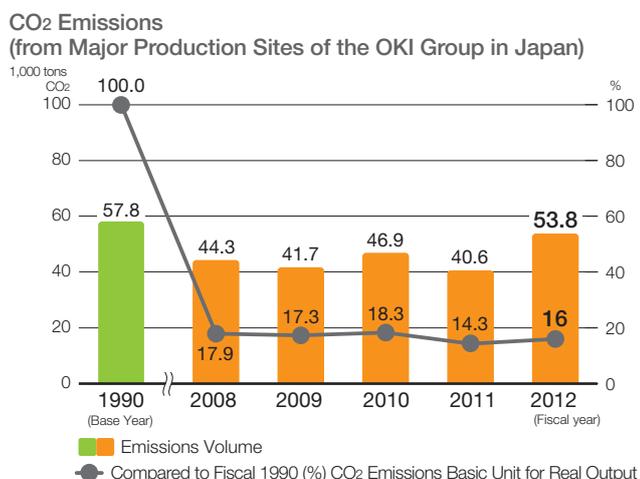
MEETING OUR CSR COMMITMENTS

facilities (active introduction of energy saving products).

As a result of these efforts, CO₂ emissions from the OKI Group's major production sites in Japan during fiscal 2012 amounted to 53,800 tons, a 33% increase over the previous fiscal year. This means that we substantially exceeded a goal set in the Voluntary Action Plan of the Japanese electric and electronics industry, "improving the basic unit for CO₂ emissions with respect to real output* in fiscal 2010 by 35% or more compared to 1990," by making an 84% improvement.

We will continue to actively work towards realizing a low carbon society, focusing on products and services and business activities from OKI Group's long term viewpoint.

* Basic unit for CO₂ emissions with respect to real output: CO₂ emissions / real output (real output = nominal output / Bank of Japan's Domestic Corporate Goods Price Index for electrical machinery and equipment with fiscal 1990 as the base year)



Prevention of Pollution

Chemical substances bring people considerable convenience. Some of them contain substances which harm people's health and the environment, so they need stronger relevant regulations and strict controls.

The OKI Group continues working to properly manage chemical substances in products and chemical substances handled when manufacturing, use alternate substances with less impact on human health and the environment, and reduce the amounts used.

Especially in regulations on chemical substances in products, in the EU, there is expansion of substances subject to control under REACH regulations, and the CE mark display and expansion of products subject to the revised RoHS directive, which has applied since January 2013. Regulations are being greatly strengthened, with studies for adding substances subject to regulations, etc. OKI Group responds appropriately to such regulations, and meets customer needs.

Prompt Response to Regulations about Chemical Substances in Products

Recognizing the importance of management of chemical

substances in products from early on, the OKI Group established and began operating the Product Assessment System in 1998. The group was also a pioneer in the development and implementation of a system to manage and calculate chemical substances in products, utilizing OKI's network technology. The group has always made prompt responses to the enactment and the revision of relevant regulations. More specifically, it has enhanced its systems to manage chemical substances, by revising the OKI Guidelines for Managing Chemical Substances in Products, and the OKI Green Procurement Standards. Furthermore, the system to manage and calculate chemical substances in products was developed later into a more comprehensive system which determines conformity with regulations, from the registration and calculation of chemical substances information. Called COINServ-COSMOS-R/R, we are working to enhance its functions. It has been sold to outsiders since April 2009.

In June 2012, we strengthened the calculation functions of COSMOS-R/R, enabling it to manage and calculate in the latest standard survey formats of JAMP*¹ and JGPSSI.*² Moreover, we added functions to total and manage the contained amounts of multiple Substances of Very High Concern (SVHC*³) required under REACH regulations, and strengthened conformity with regulations.

*¹ JAMP (Joint Article Management Promotion-consortium): Launched in September 2006, with the aim of spreading specific mechanisms for appropriately managing chemical substances information etc., and smoothly disclosing and communicating this in supply chains.

*² JGPSSI (Japan Green Procurement Survey Standardization Initiative): Group which studies standardization of lists of substances subject to surveys, and survey response formats, with the aim of reducing survey labor involved in surveys of chemical substances in parts and materials. This group was disbanded in May 2012, and its work was taken over by VT62474 in Japan.

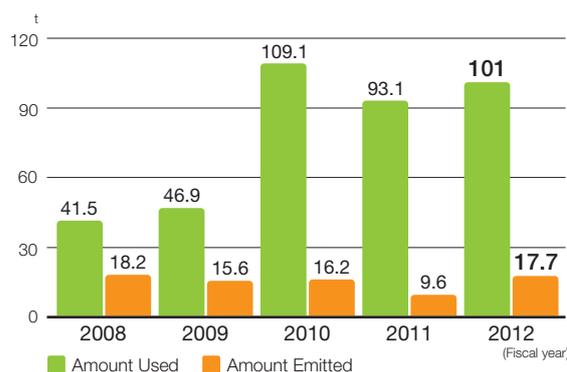
*³ SVHC (Substances of Very High Concern): Substances of Very High Concern regarding harm to the human body. Also called the Candidate List of Substances of Very High Concern for Authorisation.

Management and Reduction of Chemical Substances in Business Activities

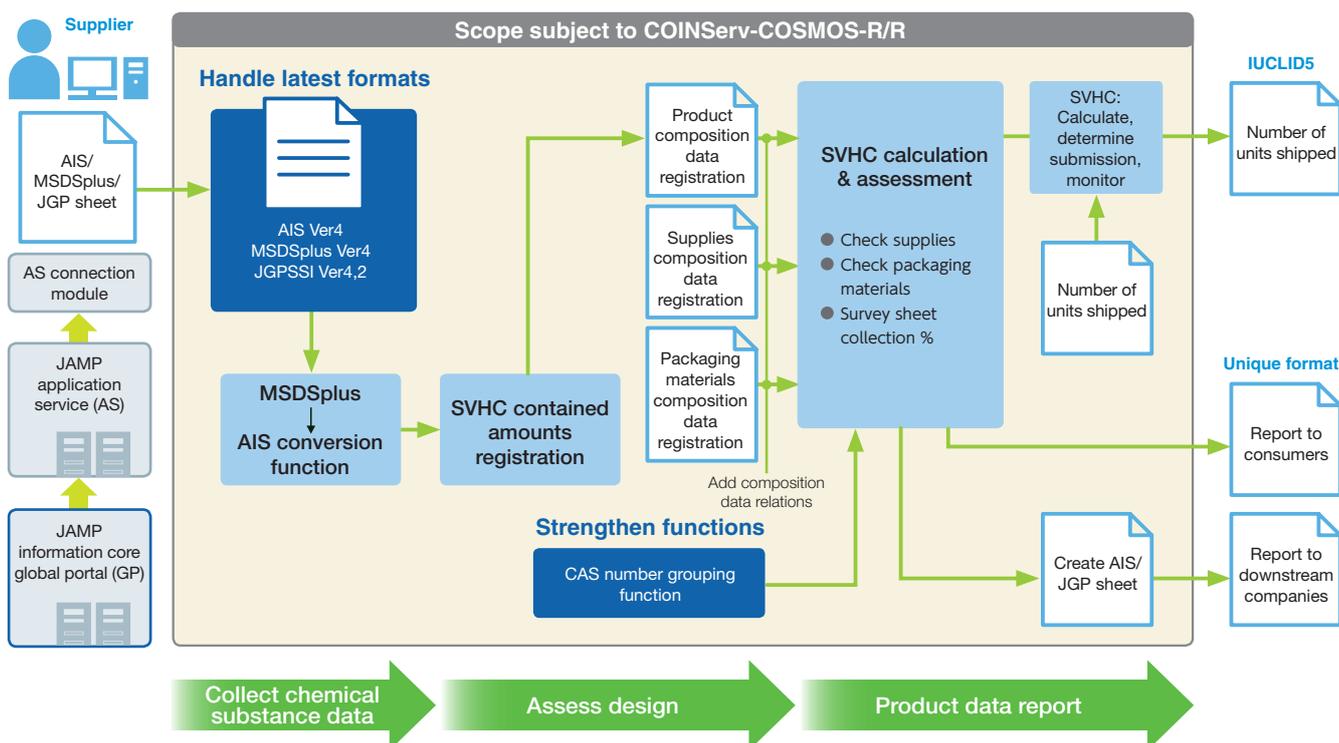
In our business activities, while chemical substances used at our production sites are managed appropriately in accordance with the levels of environmental impact, the group is making ongoing efforts for operational improvements, to reduce the use of chemical substances as well as their emissions.

During fiscal 2012, partly because we added sites into this calculation, the emissions volume was 17.7 tons, an 84% increase over the previous fiscal year.

Use and Emission of PRTR Chemical Substances



Outline of System to Manage and Calculate Chemical Substances in Products



Resource Circulation

In order to help build a resource circulation society, the OKI Group is actively promoting resource saving and recycling in its business activities. In recent years, customers increasingly desire recycling of used products. The group has also tried to recycle as many used products as possible, utilizing the Cross-jurisdictional Waste Treatment Manufacturer Scheme. We are also working to use fewer resources at production sites.

OKI Metaltech designs and manufactures sheet metal parts of computer and communications equipment. It is actively working to use nesting technology, to reduce materials used. This technology provides a technique to design for uniform materials and sheet thickness of parts, and assign parts of multiple products to one sheet of sheet metal material, and process them without waste. This initiative reduces waste of materials, and reduced material purchase costs by 8% in fiscal 2012.



Processing by nesting technology

Biodiversity Conservation

Since the 1990s, OKI Group employees at production sites in Japan and overseas have been volunteering to work on forest conservation activities: planting trees and thinning forests, etc. OKI Group has also supported activities concerning conservation of ecosystems for many years. For example, since fiscal 2001 we have sponsored the National School and Kindergarten Biotope Contest held by the Ecosystem Conservation Society-Japan. In recent years, for spring forest conservation activities, OKI participates in the Green Wave* campaign of the Secretariat of the Convention on Biological Diversity. We strive to raise the awareness of participants: before the work, we explain the significance of forest maintenance, etc.

In response to the increasing interest in biodiversity conservation, in fiscal 2010, we endorsed the Declaration of Biodiversity by Nippon Keidanren, participated in the Japan Business & Biodiversity Partnership, and started initiatives in our main business. In fiscal 2012, we launched the Biodiversity Working Group for activities throughout the OKI Group: studying policy, sharing information, providing training, etc.

We are continuing these initiatives, and will support activities for biodiversity conservation.

* Green Wave: Campaign to plant trees etc., on the occasion of the International Day for Biological Diversity (May 22) sanctioned by the UN. This is promoted by the Secretariat of the Convention on Biological Diversity. In Japan, the Ministry of the Environment, the Ministry of Agriculture, Forestry and Fisheries, and the Ministry of Land, Infrastructure, Transport and Tourism call on companies and organizations to participate.